

ChatGPT Utility in Healthcare Education, Research, and Practice: Systematic Review on the Promising Perspectives and Valid Concerns

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Abstract

ChatGPT is an artificial intelligence (AI)-based conversational large language model (LLM). The potential applications of LLMs in health care education, research, and practice could be promising if the associated valid concerns are proactively examined and addressed. The current systematic review aimed to investigate the utility of ChatGPT in health care education, research, and practice and to highlight its potential limitations. Using the PRISMA guidelines, a systematic search was conducted to retrieve English records in PubMed/MEDLINE and Google Scholar (published research or preprints) that examined ChatGPT in the context of health care education, research, or practice. A total of 60 records were eligible for inclusion. Benefits of ChatGPT were cited in 51/60 (85.0%) records and included: (1) improved scientific writing and enhancing research equity and versatility; (2) utility in health care research (efficient analysis of datasets, code generation, literature reviews, saving time to focus on experimental design, and drug discovery and development); (3) benefits in health care practice (streamlining the workflow, cost saving, documentation, personalized medicine, and improved health literacy); and (4) benefits in health care education including improved personalized learning and the focus on critical thinking and problem-based learning. Concerns regarding ChatGPT use were stated in 58/60 (96.7%) records including ethical, copyright, transparency, and legal issues, the risk of bias, plagiarism, lack of originality, inaccurate content with risk of hallucination, limited knowledge, incorrect citations, cybersecurity issues, and risk of infodemics. The promising applications of ChatGPT can induce paradigm shifts in health care education, research, and practice. However, the embrace of this AI chatbot should be conducted with extreme caution considering its potential limitations. As it currently stands, ChatGPT does not qualify to be listed as an author in scientific articles unless the ICMJE/COPE guidelines are revised or amended. An initiative involving all stakeholders in health care education, research, and practice is urgently needed. This will help to set a code of ethics to guide the responsible use of ChatGPT among other LLMs in health care and academia.